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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/048,795 03/27/98 ICHIZAKI

T 35.62127

005514
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NEW YORK NY 10112

IM22/0919

EXAMINER

ANDERSON, M

ART UNIT

PAPER NUMBER

1765

DATE MAILED:

09/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/048,795	ICHIZAKI, TOSHIO	
	Examiner	Art Unit	
	Matthew A. Anderson	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 1998 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner's Note

Use claims do not impart patentability to apparatus. Please refer to MPEP 2111.02 and MPEP 2173.05(q). Please see the above MPEP sections for germane case law citations.

Claim Rejections - 35 USC 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 45-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tokuhara in view of Cheredov [Inorganic Materials, Vol. 28, No. 3 1992 (Russian)] and Wanetzky (US 4,818,282).

Tokuhara describes an apparatus comprising crucibles. The crucible is divided into multi-stages, each of which has an overflow passage on the sidewall (See Fig. 2.)

Such an arrangement of crucibles reads on the claims of the applicant of a production apparatus having a crucible divided in multi-stages wherein a degassing hole is provided in a side wall portion of the crucible. Tokuhara states in the abstract that the bubbles in the melt outflow with the outflow of excess melt to ensure a quality product.

Tokuhara et al. does not disclose an apparatus wherein the crucibles (i.e. stages) are arranged such that the lower portion of a first stage of said plurality of stages is positioned to cover an upper edge of a wall portion of a second stage of said plurality of stages.

Cheredov in Fig I shows the sequential location of the crystallization front of a Calcium Fluoride crystal being refined in the multistage crucible shown. Also seen is a hole in the center bottom of each crucible stage. Also disclosed is the use of oxygen for assisting the purification of the CaF being refined. This suggests gas flow as important to a successful crucible apparatus.

Wanetzky et al. discloses staked crucibles (22) which have capillary gaps (28) for gas flow at the walls (24) thereof in the only Fig. Also clearly shown is a central concentric opening (26) in the crucibles.

It would have been obvious to modify the apparatus of Tokuhara, Cheredov, and Wanetzky to one of ordinary skill in the art at the time of the present invention because all inventions disclose multi-staged crucible apparatus and such a combination would have been anticipated to produce a quality product as disclosed by Tokuhara.

It would have been obvious to duplicate the part of degassing holes (see MPEP 2144.04 VI.B) in a crucible divided into a plurality of stages which is heated by a heater

because Tokuhara discloses a hole in the side wall of such crucibles and duplication of such holes would have been anticipated to produce an expected result.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to for a crucible wherein the lower portion of a first stage of the plurality of stages is positioned to cover an upper edge of a wall portion of a second stage of the plurality of stages because such is shown as described by Cheredov and Wanetzky et al. and such would have been anticipated to produce an expected result .

It would have been obvious to one of ordinary skill in the art at the time of the present invention to include a connecting hole in the bottom center portion of the crucibles because such an arrangement is shown by Cheredov et al. and Wanetzky et al. and because such an arrangement would have been anticipated to produce an expected result.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to modify the size of the degassing hole and the inner diameter of the crucible (see MPEP 2144.04 IV.A), and the shape of the bottom face of the crucible (MPEP 2144.04 IV.B, because Tokuhara et al. discloses degassing holes in the sidewall of a crucible, Cheredov et al. and Wanetzky et al. discloses multistage crucibles with a hole at the center, and because such modification would have been anticipated to produce an expected result.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to form a cylindrical crucible because Wanetzky et al. suggests such a crucible in the description to the Fig. (col. 5 lines 1-15 the crucible is body of rotation).

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It would have been obvious to one of ordinary skill in the art at the time of the present invention that the crucibles of Tokuhara have a region for mounting a material (e.g. another crucible) because the crucible are described as stacking one on the other in the abstract and because providing such a mounting region on a crucible would have been anticipated to produce an expected result.

It would have been obvious to one of ordinary skill in the art at the time of the present invention that a region, obtained by superimposing a plurality of crucibles, would receive a material because Tokuhara discloses such a region in Fig. 2 and such a region would have been anticipated to produce an expected result.

It would have been obvious to one of ordinary skill in the art at the time of the present invention to have as the bottom stage a crucible without a connecting hole because if used with a refining method such as Cheredov's, such a stage would prevent loss of the refined molten material out onto the floor which would result in possible worker injuries and material losses and because such a bottom crucible would have been anticipated to produce an expected result.

Response to Arguments

3. Applicant's arguments filed 7/31/01 have been fully considered but they are not persuasive.

4. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The combination of references suggest the crucible claimed.

The argument that the combination does not suggest a degassing hole is not persuasive. First, an intended use claim such as this for an apparatus does not impart patentability. Second, Tokuhara discloses in the abstract that the bubbles from the melt flow out through the overflow holes. Lastly, gas would have been able to flow out the holes.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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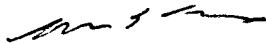
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt Anderson whose telephone number is (703) 308-0086. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are not successful, the examiner's supervisor, Benjamin Utech, can be reached at (703) 308-3836.

Any inquiry of a general nature can be directed to the group receptionist whose telephone number is (703) 308-0661.

MAA

September 18, 2001


BENJAMIN L. UTECH
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